



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/786,331

02/26/2004

Tsuyoshi Kitahara

Q80114

2651

23373 7590 01/24/2007  
SUGHRUE MION, PLLC  
2100 PENNSYLVANIA AVENUE, N.W.  
SUITE 800  
WASHINGTON, DC 20037

EXAMINER

KIM, PAUL D

ART UNIT

PAPER NUMBER

3729

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

01/24/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/786,331

Applicant(s)

KITAHARA, TSUYOSHI

Examiner

Paul D. Kim

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 15, 17-22, 37-41 and 50-53 is/are pending in the application.
- 4a) Of the above claim(s) 17, 18, 37-41 and 50-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/13/2006 has been entered.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al. (JP 08-187868) in view of Mitani (US PAT. 5,621,524).

Takashi et al. teach a process of making an ink-jet recording head comprising steps of: forming a partition wall (3) member in order to form a common ink chamber (6) on a front surface of a plate-shaped member as shown in Fig. 5 (I); etching the plate-shaped member to form a land (9) on a back surface of the plate-shaped member as shown in Fig. 6; and attaching a nozzle plate (2) directly to the front surface of the plate-shaped member as shown in Fig. 2. Wherein the plate-shaped member includes a first layer (a layer of 3) having the front surface, a second layer having the back surface (a

Art Unit: 3729

layer of 9) and an intermediate layer (a layer of 21) sandwiched between the first and the second layers as shown in Fig. 2, the etching step etches a desired portion of the second layer selectively over the intermediate layer so that the second layer is penetrated.

However, Takashi et al. fail to teach how to form the partition wall member.

Mitani teaches a process of forming an ink jet head including a process of forming a partition wall (8) by etching using photoetching techniques as shown in Fig. 1 in order to form individual ink channels (9) and a common ink channel (10) (see also col. 4, lines 59-67). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating a partition wall of Takashi et al. by forming a partition wall by etching as taught by Mitani in order to form individual ink channels and a common ink channel.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takashi et al. in view of Mitani, and further in view of Otsuka et al. (US PAT. 6,305,792).

Takashi et al., modified by Mitani, teach all of the limitations as set forth above except a base member having an auxiliary ink storage chamber communicated with a common ink storage chamber between the plate-shaped member and the nozzle plate (as per claim 19). Otsuka et al. teach a process of making an ink-jet recording head including a base member (101,102,103) having an auxiliary ink storage chamber (30) communicated with a common ink storage chamber (34) between the plate-shaped member (104,105) and the nozzle plate (100) as shown in Fig. 1 (see also col. 1, line 23 to col. 2, line 20) in order to communicate between the auxiliary ink storage chamber and the ink storage chamber for reducing the ink storage chamber to make the ink-jet recording head small.. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating an ink-jet recording head of Takashi et al., modified by Mitani, by the base member having an auxiliary ink storage chamber as taught by Otsuka et al. in order to communicate between the auxiliary ink storage chamber and the ink storage chamber for reducing the ink storage chamber to make the ink-jet recording head small. Otsuka et al. also teach that the auxiliary ink storage chamber is offset from a position corresponding to the common ink storage chamber and partly overlaps the ink supply passage as shown in Fig. 1 (as per claim 20).

Otsuka et al. teach a process of making an ink-jet recording head including a process of adhering a nozzle plate (1) to an ink chamber plate (2, equivalent with the plate-shaped member) in order to increase bonding strength between the nozzle plate and the ink chamber plate as shown in Fig. 8 (see also col. 8, line 55 to col. 9, line 8).

Art Unit: 3729

Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify a process of fabricating an ink-jet recording head of Takashi et al., modified by Mitani, by adhering between the nozzle plate and the ink chamber plate as taught by Otsuka et al. in order to increase bonding strength between the nozzle plate and the ink chamber plate.

### ***Allowable Subject Matter***

6. Claim 22 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to disclose the claimed invention such as an adhesive receiving groove, which is formed in the front surface of the plate-shaped member corresponding to the partition wall to suppress a protrusion of the adhesive when bonding the nozzle plate or the base member to the front surface of the plate-shaped member with the adhesive. It is not obvious taken alone or in combination of other references fairly to suggest the claimed invention.

### ***Response to Arguments***

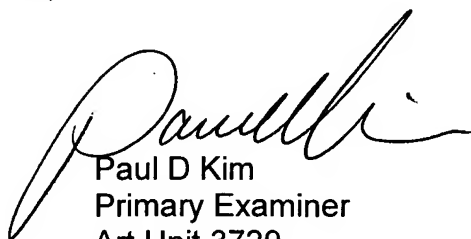
8. Applicant's arguments with respect to claims 15, 19, 20 and 22 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul D. Kim whose telephone number is 571-272-4565. The examiner can normally be reached on Monday-Thursday between 6:00 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Paul D Kim  
Primary Examiner  
Art Unit 3729